

INTERNATIONAL SEARCH REPORT

national Application No

T/GB2004/003959

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01S5/20 G02B6/10 H01S5/343 G02B6/42

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01S G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 028 877 A (NEC CORP) 22 February 2000 (2000-02-22) column 28, line 14 - column 29, line 37; figures 26,27	1-5,12, 17
X	US 2001/028668 A1 (FUKUNAGA TOSHIAKI ET AL) 11 October 2001 (2001-10-11) page 3, paragraph 32 - page 6, paragraph 69; figures 1-5	1-5, 7-10,12, 15,17
X	WO 02/25787 A (TRAENKLE GUENTHER ; WENZEL HANS ; ERBERT GOETZ ; OSRAM OPTO SEMICONDUCT) 28 March 2002 (2002-03-28) page 7, line 5 - page 12, line 3; figures 1-6	1-15,17, 18
Y		16



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the International filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the International filing date but later than the priority date claimed

T later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the International search

10 November 2004

Date of mailing of the International search report

09/12/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Frisch, A

INTERNATIONAL SEARCH REPORT

national Application No

T/GB2004/003959

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WENZEL H ET AL: "High-power diode lasers with small vertical beam divergence emitting at 808 nm" ELECTRONICS LETTERS, IEE STEVENAGE, GB, vol. 37, no. 16, 2 August 2001 (2001-08-02), pages 1024-1026, XP006017047 ISSN: 0013-5194 the whole document	1-15,17, 18
Y	----- US 4 794 611 A (CANON KABUSHIKI KAISHA) 27 December 1988 (1988-12-27) column 2, line 31 - column 6, line 17; figure 3	16
Y	----- US 4 794 611 A (CANON KABUSHIKI KAISHA) 27 December 1988 (1988-12-27) column 2, line 31 - column 6, line 17; figure 3	16
A	B.K. NAYAR ET AL.: "Novel high-power narrow-beam divergence tapered laser arrays at 980 nm" TECHNICAL DIGEST, CONFERENCE ON LASERS AND ELECTRO-OPTICS, CONFERENCE EDITION, 3. - 8. MAY 1998, SAN FRANCISCO, CA, USA, 3 May 1998 (1998-05-03), pages 39-40, XP002304949 page 39, column 3, paragraph 1; figure 2	1-18
A	VAKHSHOORI D ET AL: "980 nm spread index laser with strain compensated InGaAs/GaAsP/InGaP and 90% fibre coupling efficiency" ELECTRONICS LETTERS, IEE STEVENAGE, GB, vol. 32, no. 11, 23 May 1996 (1996-05-23), pages 1007-1008, XP006005141 ISSN: 0013-5194 page 1007, column 1, paragraph 2 - column 2, paragraph 2; figures 1,2	1-18
A	LAY T S ET AL: "Electro-modulation spectroscopy and laser performance of an InGaAsP asymmetric multi-quantum-well structure" OPTICS COMMUNICATIONS, NORTH-HOLLAND PUBLISHING CO. AMSTERDAM, NL, vol. 211, no. 1-6, 1 October 2002 (2002-10-01), pages 289-294, XP004382816 ISSN: 0030-4018 page 290, column 1, paragraph 3 - page 291, column 1, paragraph 1 ----- -/--	1-18

INTERNATIONAL SEARCH REPORT

national Application No
T/GB2004/003959

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>BUDA M ET AL: "Asymmetric design of semiconductor laser diodes: thin p-clad and low divergence InGaAs/AlGaAs/GaAs devices"</p> <p>LEOS 2002. 15TH. ANNUAL MEETING OF THE IEEE LASERS & ELECTRO-OPTICS SOCIETY. GLASGOW, SCOTLAND, NOV. 11 - 12, 2002, ANNUAL MEETING OF THE IEEE LASERS AND ELECTRO-OPTICS SOCIETY, NEW YORK, NY : IEEE, US, vol. VOL. 1 OF 2, 13 November 2002 (2002-11-13), pages 647-648, XP010622327 ISBN: 0-7803-7500-9 the whole document</p>	1-18
A	<p>PATENT ABSTRACTS OF JAPAN vol. 0103, no. 59 (E-460), 3 December 1986 (1986-12-03) -& JP 61 156788 A (SONY CORP), 16 July 1986 (1986-07-16) abstract; figures 2,3</p>	1-18
A	<p>SMOWTON P M ET AL: "650-NM LASERS WITH NARROW FAR-FIELD DIVERGENCE WITH INTEGRATED OPTICAL MODE EXPANSION LAYERS"</p> <p>IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS, IEEE SERVICE CENTER, US, vol. 5, no. 3, May 1999 (1999-05), pages 735-739, XP000930556 ISSN: 1077-260X page 735, column 2, paragraph 3 - page 737, column 2, paragraph 1; figures 1-6</p>	1-18
A	<p>US 5 923 689 A (SU YAN-KUIN ET AL) 13 July 1999 (1999-07-13) cited in the application column 3, line 12 - column 5, line 17; figures 1,2</p>	1-18
A	<p>US 5 815 521 A (VAKHSHOORI DARYOOSH ET AL) 29 September 1998 (1998-09-29) cited in the application column 2, line 26 - column 4, line 7</p>	1-18

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6028877	A	22-02-2000	JP 2820140 B2 JP 10173292 A	05-11-1998 26-06-1998
US 2001028668	A1	11-10-2001	JP 2001358407 A JP 2002057410 A	26-12-2001 22-02-2002
WO 0225787	A	28-03-2002	DE 10046580 A1 WO 0225787 A1 DE 20108607 U1 EP 1323219 A1 JP 2004509478 T US 2004047378 A1	04-04-2002 28-03-2002 30-08-2001 02-07-2003 25-03-2004 11-03-2004
US 4794611	A	27-12-1988	JP 2084915 C JP 6032339 B JP 61144089 A GB 2170044 A , B	23-08-1996 27-04-1994 01-07-1986 23-07-1986
JP 61156788	A	16-07-1986	JP 6080859 B	12-10-1994
US 5923689	A	13-07-1999	NONE	
US 5815521	A	29-09-1998	DE 69705559 D1 DE 69705559 T2 EP 0790685 A1 JP 9232692 A	16-08-2001 23-05-2002 20-08-1997 05-09-1997